

App. No.: 10/606,515

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JAN 16 2007

No claims have been amended, canceled, withdrawn or added. Claims 25-48 are pending.

Record of Contact with the Examiner

On Tuesday, December 5, 2006, Gayle Bekish, assistant to attorney Jose Mata, conferred with the Examiner and confirmed that the Bringby reference is 6,285,883 and not 6,283,883.

Previous Rejection under 32 U.S.C. § 102(b)

The previous April 20, 2006 Office Action ("Previous Office Action") rejected claims 25, 36, and 44 under Section 102(b) as anticipated by Bringby et al., 6,285,883 (the Office action mistakenly states 6,283,883, but intended 6,285,883). In responding to that rejection, Applicant mistakenly directed his argument to another Bringby reference: Bringby et. al., 6,175,745, "Initial Transmit Power Determination in a Radiocommunication system." That is, Applicant responded as if the Section 102(b) rejection had been based on Bringby et. al., 6,175,745 instead of Bringby et al., 6,283,883. This error was unintentional. Nevertheless, Applicant regrets the error.

However, upon review of the correct reference, Bringby et al., 6,285,883, Applicant again asserts that claims 25, 36 and 44 are not anticipated by Bringby et al., 6,285,883 (hereinafter "Bringby").

Claim 25 recites:

A method for facilitating handover between a base station pair in a communication system comprising:

computing a cost function for the base station pair dependent on a relative received signal strength and an adaptive hysteresis factor;

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selecting a base station from the pair dependent on the cost function and a second factor, **wherein the second factor is either base station load or physical distance between a user terminal and the base station.** (Emphasis added).

Thus, the emphasized portion of claim 25 recites selecting a base station from a pair of base stations dependent upon a cost function and a second factor, wherein the second factor is either base station load or physical distance between a user terminal and the base station. At least this limitation of claim 25 is not taught by Bringby.

In rejecting claim 25, the previous Office Action cited fig. 1 and col. 1, lines 34-43 of Bringby as describing “wherein the second factor is either base station load or physical distance between a user terminal and the base station (the signal strength decreases exponentially with increase in distance . . .)” (Previous Office Action, p. 3). Turning first to Fig. 1 of Bringby, it merely shows a relationship between signal strength and distance. It does not describe using distance between a user terminal and a base station as a second factor in selecting between a pair of base stations, as recited by claim 25.

Turning next to col. 1, lines 34-43 of Bringby, it merely describes a decrease in signal strength as the distance between a base station and a mobile station increases. But it does not describe using distance between a user terminal and a base station as a second factor in selecting between a pair of base stations, as recited by claim 25.

Further, the current Office Action of October 17, 2006 (“Office Action”), the Office acknowledges that, “Bringby fails to disclose selecting a base station from the pair of base stations dependent on the cost function and a second factor, wherein the second factor is either base station load or physical distance between a user terminal and the base station.” (Office Action, p. 3). As discussed, below, the Office then relies upon a secondary reference to allegedly describe distance as a secondary factor.

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Therefore, Bringby fails to describe using distance between a user terminal and a base station as a second factor in selecting between a pair of base stations, as recited by claim 25. Bringby therefore fails to anticipate claim 25.

The other independent claims 36 and 44 also recite using distance between a user terminal and a base station as a factor. The above arguments regarding claim 25 are fully applicable to claims 36 and 44. Claims 36 and 44 are therefore also not anticipated by Bringby.

Previous Rejections under 35 U.S.C. § 103(a)

Reviewing the previous rejections under Section 103(a) in light of the correct Bringby reference, Applicant asserts that all of the rejected claims are allowable.

The Previous Office Action rejected claims 26 and 37 under Section 103 as being unpatentable over Bringby in view of Watters et al., U.S. Patent Application No. 20010002822 ("Watters"). Claim 26 depends from claim 25 and claim 37 depends from claim 36. The rejection of claims 26 and 37 was expressly conditioned upon Bringby teaching or suggesting all the limitations of independent claims 26 and 37.

However, as discussed above, Bringby does teach nor suggest all the limitations of claims 25 and 36. Watters was not cited for the purpose of teaching the limitations of independent claims 25 and 36. Claims 26 and 37 are therefore patentable over Bringby and Watters. MPEP § 2141.03.

Claim 27 was rejected under Section 103 as being unpatentable over Bringby in view of Akopain et al., U.S. Pat. No. 6,466,164, ("Akopain"). Claim 27 depends from claim 25.

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As discussed above, Bringby does not teach nor suggest all the limitations of claim 25. Akopain was not cited for the purpose of teaching the limitations of claim 25. Claim 27 is therefore patentable over Bringby in view of Akopain.

Claim 45 was rejected under Section 103 as being unpatentable over Bringby in view of Hashem et al., U.S. Patent Application No. 20030073455 ("Hashem"). Claim 45 depends from independent claim 44.

As discussed above, Bringby does not teach nor suggest all the limitations of claim 44. Hashem was not cited for the purpose of teaching the limitations of claim 44. Claim 27 is therefore patentable over Bringby in view of Hashem. MPEP § 2141.03.

Applicant now turns to the current office action and the current rejections.

Rejections under 35 U.S.C. § 103(a)

The current non-final October 17, 2006 Office Action ("Office Action") rejects claims 25, 36, and 44 under Section 103(a) as being unpatentable over Bringby et al., 6,285,883 ("Bringby") (again, the Office action mistakenly states 6,283,883, but intends 6,285,883) in view of an article by Itoh et. al., "Performance of Handoff Algorithm Based on Distance and RSSI Measurements" ("Itoh"). For at least the reasons stated below, the above claims are not rendered obvious by Bringby in view of Itoh.

As discussed above, independent claim 25 recites selecting a base station from a pair of base stations dependent upon a cost function and a second factor, wherein the second factor is either base station load or physical distance between a user terminal and the base station. Further, also as discussed above, Bringby does not teach or suggest at least this limitation of claim 25. Moreover, the Office admits that Bringby does not teach or suggest the above limitation of claim 25. (Office Action, p. 3).

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However, the Office cites fig. 1(a) and p. 1461, lines 1-10 of Itoh as describing the use of measured distance as a second factor. *Id.* The Office then contends that, "It would have been obvious to one of ordinary skill in the art to combine the teaching of Itoh with the system of Bringby for the benefit of reducing average handoff delay and the average number of handoffs in a mobile communication system." *Id.* Thus, it appears the Office seeks to modify Bringby (the primary reference) to practice Itoh's alleged teaching or suggestion of using measured distance as a second factor.

However, Bringby cannot be modified to use the distance formula of Itoh without changing its principle of operation. "If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie obvious.*" MPEP § 2143.01(VI) citing, *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). The primary reference, Bringby, contains no discussion of distance. On the contrary, Bringby states a formula for determining when to perform a handoff. That formula, considers only received signal strength and a hysteresis factor:

The signal strength of the present call, with the hysteresis added, is compared with the signal strength of the neighbors. A handoff is initiated when the signal strength of a neighbor (RSSI_neighbor) is higher than that of originating cell (RSSI_orig) plus hysteresis i.e. satisfying the condition:

$$\text{RSSI_neighbor} > \text{RSSI_orig} + \text{SSHY} \quad (1)$$

where SSHY is the hysteresis signal strength of the originating cell. When this condition is met, a handoff request is sent to the MSC and various quality measurement procedures are initiated to verify that the potential neighboring BS can successfully communicate with the MS. When everything checks out, the MSC issues a handoff order to the MS to switch to the new channel.

Bringby, col. 4, lines

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Thus, subject only to verifying that communication between a base station and a mobile station is possible, when the above formula is met, a handoff is initiated. The above formula is not subject to exceptions for other factors, such as insufficient distance between the base station and the mobile station.

In contrast to Bringby, Itoh requires two conditions to both be met to initiate a handoff:

The algorithm considered performs a handoff to the adjacent base station if **both of the following conditions are met**, as illustrated in Fig. 1(b):

- 1) if the measured signal strength from the adjacent base station exceeds that of the serving base station by a hysteresis level h (dB);
- 2) if the measured distance from the serving base station exceeds that of the adjacent station by a threshold distance γ (m).

Itoh, p. 1461 (emphasis added).

If one modifies Bringby to only perform a handoff when the above distance condition is met, then handoffs will not be performed in some cases even though Bringby's formula based on received signal strength and a hysteresis factor is satisfied. Fewer handoffs would occur than is intended by Bringby. Thus, Bringby's principle of operation would be modified. The formulas applied by Bringby and Itoh clash and cannot be combined without changing Bringby's principle of operation. Thus, the Office has failed to make a *prima facie* case of obviousness based on modifying Bringby to include the distance factor of Itoh.

As discussed above, Bringby alone does not teach or suggest at least the above-described limitation of claim 25. Therefore, claim 25 is not rendered obvious by Bringby and Itoh.

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The other independent claims 36 and 44 both recite a second factor that includes distance. The above arguments relative to claim 25 are applicable to claim 36 and 44. Therefore, these claims are also not rendered obvious by Bringby and Itoh.

Claims 26 and 37 are rejected under Section 103(a) as being unpatentable over Bringby in view Itoh as applied to claims 25 and 36 and in further view of Watters et al., U.S. Patent Application No. 20010002822 ("Watters"). Claim 26 depends from claim 25 and claim 37 depends from claim 36. The rejection of claims 26 and 37 is expressly conditioned upon Bringby and Itoh teaching or suggesting all the limitations of independent claims 25 and 36.

However, as discussed above, Bringby and Itoh cannot be combined and Bringby does not teach nor suggest all the limitations of claims 25 and 36. Watters is not cited for the purpose of teaching the limitations of independent claims 25 and 36. Claims 26 and 37 are therefore not rendered obvious by Bringby in view of Itoh and in further view of Watters. MPEP § 2141.03.

Claim 27 is rejected under Section 103(a) as being unpatentable over Bringby in view of Itoh as applied to claim 25 and in further view of Akopain et al., U.S. Pat. No. 6,466, 164, ("Akopain"). Claim 27 depends from claim 25.

As discussed above, Bringby and Itoh cannot be combined and Bringby does not teach nor suggest all the limitations of claim 25. Akopain is not cited for the purpose of teaching the limitations of claim 25. Claim 27 is therefore not rendered obvious by Bringby in view of Itoh and in further view of Akopain. MPEP § 2141.03.

Claim 45 is are rejected under Section 103(a) as being unpatentable over Bringby in view of Itoh as applied to claim 44 and in further view of Hashem et al., U.S. Patent

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Application No. 20030073455 ("Hashem"). Claim 45 depends from independent claim 44.

As discussed above, Bringby and Itoh cannot be combined and Bringby does not teach nor suggest all the limitations of claim 44. Hashem is not cited for the purpose of teaching the limitations of independent claim 44. Claim 45 is therefore not rendered obvious by Bringby in view of Itoh and in further view of Hashem. MPEP § 2141.03.

Allowable Subject Matter

Applicant appreciates that claims 28-35, 38-43 and 46-48 have been found to have allowable subject matter. (Office Action, p. 8, ¶ 7). However, these claims are objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form. *Id.*

However, as Applicant pointed out in response to the previous office action, claim 34 is already in independent form. Applicant respectfully requests that the objection to independent claim 34 be withdrawn and that claim 34 be allowed.

Claim 35 depends from allowable independent claim 34. Applicant therefore respectfully requests that the objection to claim 35 be withdrawn and that claim 35 be allowed.

With respect to claims 28-33, 38-43 and 46-48, Applicant respectfully submits that the rejection of the base claims is overcome herein, meaning that these claims are allowable as written. Applicant therefore respectfully requests that the objection to these claims be withdrawn.

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Conclusion

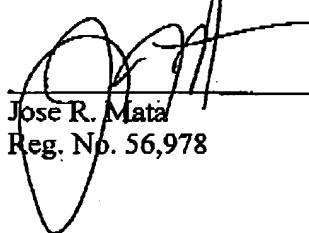
Applicant respectfully submits the present application is in condition for allowance.

The Commissioner is authorized to charge or credit any deficiencies or overpayments in connection with this submission to Deposit Account No. 02-2666, and is requested to notify us of same.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

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